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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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MILES & STOCKBRIDGE PC
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EXAMINER	
FISCHMANN, BRYAN R	

ART UNIT	PAPER NUMBER
3618	

DATE MAILED: 08/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/690,577	BELTRAME ET AL.
	Examiner	Art Unit
	Bryan Fischmann	3618

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 October 2003*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *23 October 2003* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Specification

1. The disclosure is objected to because of the following:

A) Although not strictly objectionable, the use of the term "golf cart" over the term "golf buggy" throughout the specification and abstract may be preferred. Not this change is only a suggestion and is not considered mandatory.

B) The following recited phrases are unclear, awkwardly worded, and/or grammatically incorrect:

1) subparagraphs "iii" of page 2 and "i" and "ii" on page 3 are objected to for reasons set forth in the 112 1st portion of this Office Action.

2) The recitations of "operator-initiated input signal" on line 24 of page 3 and "further input signal" on lines 28 and 29 of page 3 are objected to for reasons set forth in the claim objection portion of this Office Action.

See also lines 19-21 and line 32 of page 9.

3) Line 27 of page 3 recites "...the standby mode state deactivates...". It is not considered clear, when read in context, what is "deactivated".

4) Lines 20-27 of page 4 are objected to for reasons set forth in the 112 2nd portion of this Office Action.

5) Lines 9 of page 8 to line 10 of page 9 are objected to for reasons set forth in the 112 1st portion of this Office Action.

6) The meaning of "chemical switch" on line 2 of page 9 is considered unclear.

Oath/Declaration

2. The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP " 602.01 and 602.02.

The oath or declaration is defective because:

The oath or declaration claims priority under USC 35 119(a)-(d) to foreign document PR 2824. However, this document was dated 1-2-2001 and the US Application was filed 2-1-2002. Due to this, Applicant has not met the conditions for claiming foreign priority under USC 35 119(a)-(d), namely that more than one year has elapsed between the date on the priority document and the US filing date.

Due to this, a new declaration will be required not claiming foreign priority to this foreign document.

Drawings

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign not mentioned in the description: 1 and 9. A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

4. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the following must be shown or the features canceled from the claims. No new matter should be entered.

Claims 1 or 14 - a golf buggy

Claim 2 - the switch

Claim 3 - structure within reference number 29 associated with the timed standby mode and structure on reference number 37 allowing the generation of the operator-initiated input signal

Claim 6 - adjacent magnets being of opposite polarity

Claims 7, 8 and 11 - the multiphase (three-phase) stator

Claim 9 - more than one coil wrapped around a pole and the number of coils equaling the number of phases

Claim 10 - the poles are divided into a number of groups equal to the number of phases and the poles in each group are wound with a separate coil form the coil or coils used to wind each other group

Claim 11 - every third pole is wound by one of three separate coils

Claim Objections

5. Claim 1-14 are objected to because of the following:

Note: The claims are considered to be replete with objectionable matter. Therefore, a comprehensive listing of all objectionable matter cannot be guaranteed. Applicant is advised to review all claims for objectionable matter.

A) The recitation of "the selected direction" at the end of claim 1 is considered a bit unclear as this recitation lacks antecedent basis, and would be perhaps better worded as "the same direction as the initial manual movement", or similar.

B) Claim 3 recites "operator-initiated input signal" and "further input signal".

These recitations are best understood to correspond to reference number 37. However, the Applicant has not made clear exactly how the operator "initiates" the input signal relative to reference number 37, or exactly what reference number 37 represents. For example, is reference number 37 simply an "on" switch, some sort of "cipher lock", or a key that is inserted into a lock and turned?

C) Although not strictly objectionable, the use of the term "golf cart" over the term "golf buggy" may be preferred in claims 1 and 14. Not this change is only a suggestion and is not considered mandatory.

Claim Rejections - 35 USC ' 101

6. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

7. Claims 1-14 are rejected to due to the following:

Claim 1, in subparagraph "iii" positively recites "the operator".

Note that an "operator" is non-statutory subject matter.

In order to overcome this rejection, Applicant should only recite "the operator" within functional language, as was done in the preamble to claim 1.

Claim Rejections - 35 USC ' 112

8. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

9. Claim 2 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention.

Claim 2 recites "a means for sensing the direction of movement of the wheel...and...a control means responsive to the sensing means for actuating a switch...to actuate the electromagnetic drive assembly to continue to drive the wheel in the initial direction of movement selected by the operator".

Note that claim 2 is dependant upon claim 1.

Claim 1 recites "A drive assembly for at least partially driving a vehicle...adapted to be pushed or pulled by an operator...".

From the above recitations, it is best understood that the vehicle is a "hybrid type", being propelled partly by human power and partly by electric motor power. If not, at the very minimum, it is best understood that the vehicle would have to travel at the same speed as the operator so that the operator may steer and somehow stop the

vehicle when the vehicle has reached the operator's destination. However, there is no disclosure of how the speed between the operator and the vehicle and overall vehicle control (steering, stopping) are coordinated. For example, how is speed maintained going up and down hills and over smooth and uneven terrain? What prevents the vehicle from going faster than the user? How is the vehicle stopped?

From the above, it appears that there is inadequate written description as to how the vehicle continues to drive in the "initial direction of movement selected by the operator", while coordinating movement with an operator which is considered necessary for the vehicle to "continue to drive" as recited in claim 2.

10. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

11. Claims 1-14 are rejected under 35 U.S.C. 112, second paragraph, as failing to set forth the subject matter which applicants regard as their invention.

Note: The claims are considered to be replete with unclear matter. Therefore, a comprehensive listing of all unclear matter cannot be guaranteed. Applicant is advised to review all claims for unclear matter.

A) Claim 2 recites the limitation "the drive actuation means" in the preamble. There is insufficient antecedent basis for this limitation in the claim.

B) Claim 9 recites "one or more coils wound around the poles...the number of coils equaling the number of phases".

Lines 20 and 21 of page 4 recites "It is preferred...that the stator be a 3-phase stator".

Figure 2 shows that just a small portion of the circumference of the stator contains 5 poles.

From the above, it would appear that the stator contains approximately 30 poles around the entire circumference. From the above, this would mean that at a minimum, assuming one coil per pole, and one coil per phase, that the motor would include a 30-phase stator. Applicant has stated that it is preferred that the stator be a 3-phase stator.

From this, it is unclear whether Applicant is intending to have a 3-phase stator, or an approximately 30-phase stator.

Also note that control of a stator which such a large number of phases is considered difficult, due to switching requirements of the motor controller to switch on and off this large number of phases at the proper moment relative to rotor orientation.

Note also that claim 9 would seem inconsistent with claims 8, 11 (3-phase) and 10 (poles are divided into groups that equal number of phases).

Claim Rejections - 35 USC ' 102

12. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

13. Claims 1, 2, 4-7, 12 and 14, as best understood, are rejected under 35 U.S.C. 102(b) as being anticipated by WO 91/16755.

WO 91/16755 teaches a drive assembly for at least partially driving a golf cart (abstract), which is adapted to be pushed or pulled by an operator in a forward or reverse direction (abstract), the drive assembly including:

i - a wheel (3) adapted to be mounted for rotation about an axle (5);

ii - an electromagnetic drive assembly adapted to rotate the wheel about the axis (Figure 1); and

iii - apparatus (25) responsive to initial manual movement of the vehicle in the forward or reverse direction which then actuates the electromagnetic drive assembly to continue movement of the wheel in the same direction as the initial manual movement (upper portion of page 8).

Regarding claim 2, see reference numbers 23, 25 and the upper portion of page 8.

Regarding claims 4 and 5, see Figure 1.

Regarding claim 6, see the second paragraph of page 3.

Regarding claim 7, note that Figure 1 shows a stator with at least one phase.

Regarding claim 12, see the first paragraph of page 3.

14. Claims 1, 4, 5, 7, 8, as best understood, are rejected under 35 U.S.C. 102(b) as being anticipated by Strohmann, US Patent 5,540,296.

Strohmann teaches a drive assembly for at least partially driving a golf cart (line 1 of column 2), which is adapted to be pushed or pulled by an operator in a forward or reverse direction (lines 37-46 of column 4), the drive assembly including:

i - a wheel (5) adapted to be mounted for rotation about an axle (2);

ii - an electromagnetic drive assembly adapted to rotate the wheel about the axis (Figure 5); and

iii - apparatus (11 and 12) responsive to initial manual movement of the vehicle in the forward or reverse direction which then actuates the electromagnetic drive assembly to continue movement of the wheel in the same direction as the initial manual movement (lines 37-46 of column 4).

Regarding claims 4 and 5, see Figure 5.

Regarding claim 7, note that Figure 1 shows a stator with at least one phase.

Regarding claim 8, see lines 16 and 17 of column 4.

Claim Rejections - 35 USC ' 103

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

16. Claims 3 and 13, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 91/16755, in view of Tsukada, US Patent 4,267,467.

WO 91/16755 fails to teach that the control means (23) includes a timed standby mode which causes the control means to be deactivated if an input (from 25) is not received after a certain period of time.

However, it is known to provide a "timed standby mode" to disconnect electrical devices if they are not used after a certain period of time. Tsukada provides a teaching of this (abstract and column 1). Disconnecting the control means (23) of WO 91/16755 after a period of time is advantageous in that the control means which run-off electrical

power from a battery, will not deplete current unnecessarily. Disconnecting the control means of WO 91/16755 after a period of time is also advantageous in that if no input from the sensor of WO 91/16755 indicating initial manual movement after a period of time is received, it may mean that the vehicle is not intended to be moved. A later inadvertent "bump" by an object may then cause unwanted movement of the vehicle.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize timed standby mode to disconnect the control means of WO 91/16755 if no input to the control means is received after a period of time, as taught by Tsukada. Regarding claim 13, see lines 3 and 4 of page 5 of WO 91/16755.

17. Claim 9, as best understood, is rejected under 35 U.S.C. 103(a) as being unpatentable over Strohmann, US Patent 5,540,296, in view of Takura, US Patent 6,323,574.

Strohmann teaches a plurality of poles extending radially from an axis of rotation (42 - Figure 5). Strohmann fails to explicitly state that coils are wound around the poles.

However, stator coils are necessary to be wrapped around a pole in order to produce a magnetic flux which creates an electromotive force when in proximity to magnetic poles on the rotor in order to cause rotation of the motor. Figure 3 of Takura provides a teaching of coils on a pole.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made that the poles of Strohmann have coils wrapped around them, as taught by Takura.

18. Claims 10 and 11, as best understood, is rejected under 35 U.S.C. 103(a) as being unpatentable over Strohmann, US Patent 5,540,296, in view of Takura, US Patent 6,323,574.

As already noted in this Office Action, Strohmann teaches a three phase stator. Strohmann fails to explicitly state that the poles are divided into a number of groups that equals the number of phases and that the poles in each group are wound with a separate coil from the coil used to wind each other group.

However, Takura teaches that the poles are divided into a number of groups (3) that equals the number of phases (3 - A, B and C) and that the poles in each group are wound with a separate coil from the coil used to wind each other group (Figure 3). Utilizing more than one pole per group which corresponds to the number of phases is advantageous in that the number of phases is reduced, simplifying switching (32-34) requirements for the motor controller. Utilizing more than one pole per group which corresponds to the number of phases may also be advantageous in that motor speed is kept from becoming excessive.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made that the poles of Strohmann are divided into a number of groups that equals the number of phases and that the poles in each group are wound with a separate coil from the coil used to wind each other group, as taught by Takura.

Regarding claim 11, see Figure 3 of Takura.

Conclusion

19. This is a continuation of applicant's earlier Application No.10/060,283. All claims are drawn to the same invention claimed in the earlier application and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the earlier application. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action in this case. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no, however, event will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

20. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

A) O'Regan - teaches spacing of coil windings on poles

B) Nishio, et al - teaches spacing of coil windings on poles

C) Pfannschmidt - teaches motor in wheel

D) Nagamachi - teaches motorized golf cart

E) Fujuwara, et al - teaches power assisted cart with capability of sensing manual motion

F) Riepl - teaches motor in wheel

G) Olsen - teaches automatic shut-off of motor (column 1)

21. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Bryan Fischmann whose telephone number is (703) 306-5955. The examiner can normally be reached on Monday through Friday from 8:30 to 5:00.

If attempts to reach the Examiner by telephone are unsuccessful, the examiner's supervisor, Chris Ellis, can be reached on (703) 308-2560. The fax phone number for the organization where this application or proceeding is assigned is (703) 305-7687.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1113.

8-25-4

BRYAN FISCHMANN
PRIMARY EXAMINER